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# Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 132

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NORTHERN TERRITORY WANTS CONTROL OF URANIUM-RICH AREA

Canberra THE AUSTRALIAN in English 18 Nov 81 p 3

[Article by Nicholas Rothwell]

[Excerpts]

THE Northern Territory is pressing the Federal Government for control of a huge part of the uranium-rich Kakadu National Park region, in a move which could set a crucial precedent for Aboriginal land rights claims.

Territory officials, including the Chief Minister, Mr Everingham, and the Minister for Mining, Mr Tuxworth, have asked Canberra to relinquish its control over a region north of the park which may contain large uranium deposits.

The area, known as Kakadu Stage Two, was formerly Territory land, leased to Queensland Mining Limited, and was bought by the Federal Government and declared a National Park after an Aboriginal land claim failed.

The moves by the Territory to fight for the return of the land follow a decision by the National Country Party last weekend to call for the return to the Territory of control of the entire park.

"We believe there is a good chance the land could be re-

turned to the Territory's control very soon, and we have made our case extremely forcefully to federal officials," a senior Northern Territory government official said yesterday.

A confidential report on the mining prospects in the region has been prepared by a Peko Walsend expert. It estimates that the total of 300,000 tonnes of uranium proved to exist in the Kakadu "province" could have been doubled if free exploration had been permitted.

The report shows that drilling of the region, which is close to Australia's largest uranium deposits at Ranger and Jabiruka on the fringe of the park, was carried out "across the soil-covered areas of the Mudginberri Munimalary pastoral leases".

The study even concludes that the Kakadu region "could represent the largest of the world's energy resources".

It discloses that exploration of the region has already uncovered valuable uranium.

"Subsequent work, so far as it has been able to progress, has intersected a number of other mineralised zones," it says.

0100/9004

NORTHERN TERRITORY TO DEFY UNION ON YELLOWCAKE SHIPMENTS

Canberra THE AUSTRALIAN in English 13 Nov 81 p 3

[Article by Nicholas Rothwell]

[Text]

THE Northern Territory Government will defy union bans which threaten multi-million dollar exports of uranium oxide by using non-union labor to load barges.

The decision, made yesterday by the Territory's Chief Minister, Mr Everingham, and the Minister for Mines, Mr Tuxworth, underlines the Government's strong stand in favor of uranium mining.

Shipments of the yellowcake, which includes the first extracted from the large Ranger project in the Territory, will be loaded on barges at an old flying boat base outside Darwin.

The base at East Arm has been reconditioned for the operation, which will circumvent bans imposed by the Northern Territory Seamen's Union.

The union has consistently refused to handle shipments from the uranium mines, and is enforcing the ACTU policy of opposition to all mining and export of uranium.

The Ranger shipment, which is sitting on Darwin wharf, must be delivered to the customers of the mining company, Energy Resources of Australia, before December 31.

Uranium mining in the Territory has become the centre of controversy after attempts by the Government to boost the uranium industry as a counter to down-turns in other regional mining operations, which have resulted in the dismissal of more than 800 skilled workers in the past two months.

### **IN DOUBT**

The Government's decision to run the union blockade

comes only two weeks before the official opening of the Ranger project by the Minister for Trade and Resources, Mr Anthony.

The future of two other uranium sites in the Territory, at Jabiruka and Koongarra, both near the Kakadu National Park, is still in doubt as lengthy negotiations on development continue between traditional Aboriginal land owners and prospecting companies.

But the uranium industry in Queensland has received a tonic from the granting of an injunction to the State Government and Mary Kathleen Uranium, which orders the Seamen's Union in Brisbane to load a cargo of banned yellowcake.

# UNIONS SET TO ABANDON BLOCKADE OF DARWIN YELLOWCAKE

## Breakthrough in Dispute

Canberra THE AUSTRALIAN in English 3 Dec 81 p 1

[Article by Nicholas Rothwell and Peter Blunden]

[Text] YELLOWCAKE that has been blockaded in Darwin for two months is now almost certain to be shipped out by union labor.

Talks in Darwin yesterday between the Northern Territory Government and a top-level union delegation achieved a breakthrough in the dispute.

The waterfront unions in Darwin stopped 29 containers of uranium yellowcake intended for export to Europe, Japan and the US.

The fate of the yellowcake, which includes the first ore from the territory's giant new Ranger uranium mine, is widely seen as a test case for the ACTU's policy of opposition to the mining and export of uranium.

But a terse statement released after the talks said meetings between the Territory's Chief Minister, Mr Everingham, and the ACTU president, Mr Dolan, backed by federal secretaries of the uranium industry unions, could lead to resolution of the dispute.

The union bans on yellowcake, with the consent of local unionists, will now be referred to the ACTU executive. Mr Dolan disclosed that proposi-

tions had been put to the Northern Territory Government, and it had signalled it would accept them.

Next week's ACTU meeting would discuss tactics other than the blocking of exports, and would examine the whole issue of uranium mining, Mr Dolan said.

Talks had been held between Mr Everingham and the Territory's uranium mining companies before the meeting, and a union conference was held last night to discuss compromise proposals to break the deadlock.

Several new factors are known to have swayed opinion at the Darwin talks, which may well produce a revision of one of the ACTU's most determined policies.

The local unions were warned by the ACTU that if the uranium was not shipped mining companies were likely to take action under section 45d of the Federal Trade Practices Act, which prohibits secondary boycotts and provides for heavy fines against offenders.

The result of the meeting in Darwin is likely to be the development of new, stringent safety agreements under which the unions can agree to load the yellowcake.

The breakthrough came

against a background of mounting crisis. The Northern Territory Government had pledged to export the uranium on barges using non-union labor. It was known that the Ranger mine, which employs several thousand unionists, was so far ahead of its production schedule that it could close within months and still meet most of its contracts.

The recent decision by Brisbane waterfront workers to handle yellowcake from the Mary Kathleen mine also came at a time to weaken the Darwin stand.

Local union workers stand to benefit directly from the success of the Ranger project. More than 1000 members of the Miscellaneous Workers Union work at the Ranger and Nabarlek mines, and seven unions have members in the uranium province.

Meanwhile the row over uranium development in South Australia intensified yesterday as the South Australian Government was forced to delay a bill paving the way for the Roxby Downs uranium project.

State Parliament may now sit for an extra week to ensure that the bill is introduced before Christmas.



## Ore Shifted From Wharf

Canberra THE WEEKEND AUSTRALIAN in English 5-6 Dec 81 p 2

[Article by Nicholas Rothwell]

[Text]

URANIUM ore blockaded by unionists in Darwin for the past two months was taken to a high-security storage area yesterday in what appears to be a manoeuvre to have it shipped eventually by union labor.

The yellowcake cargo — the centre of a test of will over the ACTU's policy of opposition to uranium mining and export — is being stored south of Darwin but will be brought back to the wharf for loading within a fortnight.

The move follows secret talks this week between the Northern Territory Government and a union delegation chaired by the president of the ACTU, Mr Dolan.

After the talks, Mr Dolan foreshadowed a resolution of the dispute but said the matter would be referred to next week's meeting of the ACTU executive.

Although ACTU policy is strongly against mining and export of uranium on health grounds, the team of union leaders who came to Darwin to discuss the dispute were told firmly by the local branch of the Waterside Workers Federation that the members did not wish to "alienate themselves" from the territory's public.

The waterside workers were also concerned that they were bearing the brunt of the ACTU policy while other unions were openly supporting

the mining of uranium.

A resolution passed last week by a combined mining unions group conceded that no single union should be made the instrument of ACTU policy.

The decision to move the yellowcake, which includes the first uranium exports from the giant Ranger mine, was taken by the exporting companies as an attempt to defuse the tense industrial climate caused by the union blockade.

A picket line of unionists from the WWP, the Transport Workers Union and Seamans Union allowed the containers to be transported from the Stokes Hill wharf area to their new secret storage site, a depot at Thirteen Mile on the Stuart Highway south of Darwin.

Another set of yellowcake containers is still being stored at the East Arm landing near Darwin. It will be moved this weekend to a sulphur dump 20km east of the city.

The moving of the yellowcake, coming soon after the talks between the Northern Territory Government, mining companies and union leaders, appears to be part of a bargain struck to break the Darwin deadlock.

Government sources said the yellowcake had been moved at union request as a prelude to discussions, and if it was not eventually handled by union labor it would be exported through the East Arm base.

ACTU BACKS LOCAL UNIONS BAN ON DARWIN URANIUM SHIPMENTS

Canberra THE AUSTRALIAN in English 27 Nov 81 p 1

[Article by Nicholas Rothwell]

[Excerpts]

THE ACTU moved yesterday to blockade the Northern Territory's uranium mines to reinforce six-week-old Waterside Workers Union bans on uranium shipments through Darwin.

Coinciding with the union movement's tough new stand, the Northern Land Council, which represents the traditional Aboriginal owners of the region, yesterday demanded a reappraisal of mining developments.

The union's stiffening opposition occurred at a meeting of union leaders in Sydney yesterday chaired by the president of the ACTU, Mr Dolan.

Representatives of 26 unions resolved unanimously to marshal broad union support for the stand taken by three Darwin unions — the WWF, the Transport Workers Union and the Seamen's Union — against the export of uranium yellowcake.

Yesterday's resolution requires electricians, engineers and other key unionists who either work at, or supply critical equipment, machinery and goods to, the Ranger and Nabarlek mines to support the ACTU policy.

Senior union leaders, including Mr Dolan, will travel to

Darwin next week to consult members of the unions maintaining the blockade, and to form a campaign plan to stop the companies from bypassing Darwin with their yellowcake shipments.

All 26 main unions involved in uranium mining, milling and support operations were called to yesterday's meeting in Sydney to co-ordinate support for the three "front-line" unions.

Mr Dolan said later the problems facing the Darwin unions over their actions in pursuit of official ACTU policy had been discussed.

He said: "We cannot expect individual unions to take action unilaterally without the support of the whole trade union movement."

The meeting followed a conference last week between the Chief Minister of the Northern Territory, Mr Everingham, and ACTU officials. The meeting had been expected to provide some compromise over the yellowcake blockade.

But the unions decided against helping any company, or government, export uranium. They called on all unions to take supporting action, particularly on the supply of goods which make uranium mining possible.

## UK SEEN PURCHASING LARGE AMOUNTS OF LOCAL YELLOWCAKE

Canberra THE AUSTRALIAN in English 2 Dec 61 p 21

[Article by Nicholas Rothwell]

[Text]

AUSTRALIA looks almost certain to supply the multi-million dollar British nuclear fuel industry with large amounts of uranium yellowcake in the next 20 years.

The development follows recent top level government talks with the British Civil Uranium Procurement Directorate.

The directorate's chairman, Mr Fred Bonner told the Department of National Development and Energy that Britain hoped Australia would supply up to a quarter of its yellowcake needs.

A senior official at the British High Commission confirmed yesterday that Britain was trying to build up new sources of supply for its uranium, now bought almost exclusively from Namibia and Canada.

The decision to buy fuel from Australia represents what is potentially one of the biggest single uranium export contracts yet captured by the local industry.

Mr Bonner's meetings with government officials in the past fortnight have paved the way for British purchase of more than 10,000 tonnes of yellowcake, and the needs of the British Central Electricity

Generating Board. Britain's electricity utility, are likely to increase.

Nuclear power, which provides about 12 per cent of Britain's electricity, is eventually expected to supply 20 per cent of the nation's needs, requiring about 60,000 tonnes of yellowcake until the turn of the century.

The total value of the projected British yellowcake buy, calculated at the present depressed world price, would be more than \$200 million.

The negotiations are certain to increase pressure for an Australian enrichment plant, which would double the value of export yellowcake.

Mr Bonner held confidential talks with leading Australian uranium producers and potential producers, and also discussed the formation of mining and exploration joint venture groups in Australia.

It is not yet certain which mines would provide the export fuel, since most of the yellowcake from the giant Ranger mine is committed, and other mines have not yet come on stream.

A joint venture exists between Western Mining Corp and the directorate, and one is planned with Panocontinental, the holder of Australia's biggest proven uranium deposit at Jabiruka in the Northern Territory.

The directorate is charged with assuring a secure supply of nuclear fuel for Britain for 50 years.

Mr Bonner told Federal Government officials the Australian yellowcake would be bought in its raw state, because Britain had extensive nuclear enrichment facilities, but he suggested this policy could be modified after the construction of an enrichment plant in Australia.

Mr Bonner attended the opening of the Ranger mine in the Northern Territory last month and held extensive talks with company officials on behalf of the three British civil uranium users.

Pricing mechanisms for the supply contracts are believed to have been discussed, but since the cost of uranium is likely to rise during the next five years it is difficult to set an exact figure on the potential value of the British trade.

The present market price for yellowcake is running at about \$19 a kg.

News of the talks will give a major boost to the local uranium mining industry, which has been beset by criticism of its ambitious plans for expansion, on the grounds that the market for yellowcake will not grow enough in the next two decades to accommodate increased Australian exports.

## UK DELEGATION SEEKS URANIUM FOR NUCLEAR POWER PLANTS

Perth THE WEST AUSTRALIAN in English 17 Nov 81 p 36

(Text)

**SYDNEY:** Australian uranium may soon be providing the fuel for generating electricity in Britain as the result of the visit of a high-powered delegation.

The three-man delegation from the British Civil Uranium Procurement Organisation has been examining the possibility of long term contracts for Australian uranium in talks with Federal ministers and officials.

The delegation will discuss the commercial aspects with local producers this week.

Mr Fred Bonner, chairman of the procurement group and deputy chairman of Britain's Central Electricity Generating Board, told a press conference yesterday that Britain now had reached the crucial stage

in deciding whether to develop pressurised water-cooled reactors.

More uranium would be needed to augment existing supplies from Canada and Namibia, Mr Bonner said.

His organisations would not wish to be dependent on any one source of supply.

He said: "Depending on the results of a public inquiry next year on the future of the domestic nuclear programme we may move off the traditional gas-cooled reactors to pressurised water-cooled reactors, which are more easily built and somewhat cheaper.

"We are trying to provide energy to consumers at the lowest possible cost."

He said that part of this would involve the use of nuclear power to produce one-fifth of electricity supplies by about 1985.

In England and Wales nuclear power now was used for about 11 per cent of electricity production.

Mr Bonner would not disclose the quantity or values of uranium being sought but said that it was relatively small.

"It depends on the rate at which we proceed with our own nuclear programmes," he said.

DSO: 5100/9034

URANIUM ENRICHMENT PLANT GETS QUEENSLAND APPROVAL

Melbourne THE AGE in English 21 Nov 81 p 1

[Article by David Broadbent]

[Text]

BRISBANE. — The Queensland Government has given approval "in principal" for an Australian mining consortium to establish a uranium enrichment plant in the State.

Government sources said yesterday that Cabinet listed four possible sites between the Gold Coast and Townsville that could meet the requirements of the consortium and the Government.

The plant would depend on Federal Government approval — and a decision by the companies to go ahead. The companies also need to buy the technology from overseas.

Yesterday the possibility increased with reports from the US that the Reagan Administration had approved the sale of classified centrifuge enrichment technology, on condition that Australia and the US Government work out strict safeguards.

The consortium is called the Uranium Enrichment Group of Australia (UEGA). The partners are BHP, CSR Ltd, Poko Wallend and the Western Mining Corporation.

The consortium, at this stage, is committed only to a feasibility study on a plant. The study

has Federal Government approval.

The Reagan Administration's decision was conveyed by the American Energy Secretary, Mr James Edwards, in a letter to the Australian Ambassador to Washington, Sir Nicholas Parkinson.

The Australian consortium, last month submitted to Queensland Cabinet a "pre-feasibility proposal" for construction of the plant.

The proposal detailed the consortium's plans and outlined its likely infrastructure requirements. It also sought a statement of the Government's position on uranium enrichment.

Government sources said Cabinet decided it would not be feasible to build an enrichment plant north of Townsville, or at any of the State's major inland cities.

The Premier, Mr Bjelke-Petersen, has expressed firm support for the proposal, but his officials say all discussion on the plant is "purely theoretical at this stage".

The consortium's proposal to Cabinet was presented as a preliminary appraisal of the overall possibilities of developing the nuclear industry within Australia. It is believed a similar proposal was made to the West Australian Government.

CSO: 5100/9104

SA COUNCIL DIVIDED ON ROXBY DOWNS URANIUM MINING PROJECT

Brisbane THE COURIER-MAIL in English 12 Nov 81 p 32

[Text] ADELAIDE. — The huge Roxby Downs copper-uranium-gold project is under a cloud following release of the South Australian Legislative Council select committee report on uranium resources.

The report, tabled yesterday has produced an even split among the six member committee on whether uranium mining should proceed.

The three government members — the Community Welfare Minister, Mr Burdett, Mr Leigh Davis and Mr Martin Cameron, all say that they are satisfied uranium mining can proceed.

The three opposition members — Labor's Doctor John Cornwall and Mr Norm Foster and Australian Democrat Mr Lance Milne recommend that uranium mining not proceed at this stage.

While agreeing with the government members that hazards associated with the mining to enrichment stage could be overcome, the three opposition members concluded that international safeguards and nuclear waste disposal techniques had yet to be proven.

Mr Milne will hold the balance of power in the Legislative Council if all Labor members oppose any legislation to facilitate uranium mining in

South Australia.

He said after the report's release yesterday that he had not seen the forthcoming Indenture Bill for Roxby Downs and could not say which way he would vote.

However he said he would not support any uranium legislation until all international safeguards could be met.

Mr Milne said he would support the Indenture Bill immediately if Western Mining Corporation and BP Australia left the uranium in the ground.

He said he did not see the need to rush into the uranium industry and felt the Indenture Bill was not urgent.

He did not think it would do anyone a bad turn if the project was postponed until scientists had time to work out how to dispose of nuclear wastes.

The South Australia Government is expected to introduce the Indenture Bill before State Parliament goes into Christmas recess.

Western Mining Corporation chairman, Sir Arvi Parbo, said last night that the project could not proceed without Parliament's approval of the Indenture Bill.

CSO: 5100/9003

CAMPAIGN AGAINST URANIUM ENRICHMENT INDUSTRY GROWING

Canberra THE AUSTRALIAN in English 2 Dec 81 p 3

[Article by Max Jessop and Steve Harvey]

[Text]

ANTI-NUCLEAR activists are planning vigorous campaigns at federal, State and trade union levels in non-Labor States to prevent the establishment of a uranium-enrichment industry on Australian soil.

The disclosure in *The Australian* on Tuesday of a \$5 million enrichment feasibility study by a consortium of large energy companies, has also resulted in allegations of a "secret plan" to site an enrichment plant at Broadmount, near the Iwasaki tourist resort on the central Queensland coast.

"There is little doubt that Queensland is earmarked for the enrichment plant," Senator Gerry Jones (ALP, Qld) said yesterday. "I urge all Queenslanders to write to their State and federal members and senators to protest."

I also call on the Premier, Mr Bjelke-Petersen, and his Government to explain why they have been so secretive on negotiations surrounding the nuclear plant.

Anti-nuclear activists claim to have access to a document issued under the "restricted" label to members of the 18-man Queensland Cabinet.

The national conservationist group Friends Of The Earth has urged all premiers of non-Labor States to follow the Victorian lead and reject any possibility of an enrichment industry in their States.

And in Western Australia,

the State's council of trade unions will be asked to lobby against an enrichment plant. The secretary of the Trades and Labor Council, Mr Peter Cook, threatened "industrial sanctions" on moves to build a plant in the State.

Mr Cook said "We will be telling the ACTU we don't want a uranium plant in the State."

Shareholders attending yesterday's inaugural annual meeting at the Sydney Opera House of the uranium producer, Energy Resources of Australia, were confronted by anti-nuclear slogans daubed on building sites lining the way to the Opera House. Placard-waving demonstrators abused board members and shareholders.

A Friends Of The Earth spokesman, Mr John Hallam,

said the view of States which regarded an enrichment industry as an economic boon was "extraordinary".

World uranium enrichment capacity was expanding far faster than demand even though the nuclear power industry had been stagnating.

"The Uranium Enrichment Group of Australia study assumes that the demand for enrichment will pick up but this is impossible since there are virtually no new nuclear reactors scheduled to come on line when the UEGA plant will be operating after 1990," Mr Hallam said.

By 1990 the nuclear industry could well be shrinking rather than expanding, and a uranium enrichment plant would be a "billion-dollar white elephant."

# URANIUM ORE TREATMENT PLANT OPENS IN NORTHERN TERRITORY

Canberra THE AUSTRALIAN in English 20 Nov 81 p 20

[Article by Kim Slater]

[Text]

ENERGY Resources of Australia Ltd's 1.15 million tonnes-a-year uranium ore treatment plants and mines at Jabiru in the Northern Territory will be officially opened today by the Minister for Trade and Resources, Mr Doug Anthony.

Construction of the Ranger treatment plant and mine has only just been completed. Projected output for the plant is 3000 tonnes of treated uranium oxide a year.

But if further ore bodies found near the existing workings prove commercial then, according to ERA capacity of the treatment plant could be doubled if market conditions warranted it.

In its first annual report ERA said uranium sales contracts had been negotiated for

slightly in excess of 100 per cent of Ranger's output in the first 10 years and about 95 per cent for the first 15 years.

These negotiated contracts with overseas companies will largely protect ERA from the price vagaries of the uranium spot market.

Directors are still confident that ERA will make a maiden dividend payment to shareholders this financial year.

ERA's chairman, Mr A. Morokoff said that despite the depressed state of the world uranium market there were signs of resurgence in the nuclear industry. He said it was the intention of the company to produce uranium oxide at a higher capacity and enter into further sales contracts.

During the year, ERA carried out only superficial exploration work on two anomalies which have shown up near the existing numbers one and three Ranger ore bodies.

ISO: 5100/9904



# ALP BLASTS PROPOSED NUCLEAR DUMP IN AUSTRALIAN DESERTS

Canberra THE AUSTRALIAN in English 30 Nov 81 p 2

[Article by Allan Goodall and Nicholas Rothwell]

[Text] A PROPOSAL made yesterday at an international conference in Japan to dump high-level nuclear wastes from other countries in Australian deserts, has sparked a storm of protest from leading politicians.

The plan, sketched by a leading German nuclear expert, Dr Otto Rosenbaum, at a Tokyo conference, was dismissed by the Federal ALP as "absurd" while Government officials pointed out it was "contrary to Australia's policy".

Under Dr Rosenbaum's plan, the deserts of Australia could be used as a safe storage site for the radioactive wastes of the western industrial nations.

He told the Tokyo meeting on radioisotopes that underground dumps of steel-encased nuclear waste only needed to be protected from intruders to remain safe for 300 years.

Japanese nuclear power officials who heard Dr Rosenbaum's suggestion expressed keen interest in the desert storage plan. Japan's own waste disposal program is under worldwide attack from environmentalists because it includes the dumping of drums of low-level waste in the north Pacific.

Dr Rosenbaum, of the Health and Social Affairs Ministry of the West German State of North Rhine-Westphalia, told the meeting the desert storage plan was being "held back for political reasons".

## 'ABSURD'

"Many desert countries would probably welcome additional income which developed countries would readily pay for this service," he said.

According to Dr Rosenbaum, Australian deserts should be "quite suitable".

"No harm should come to anybody — just build a fence around the area and look after it," he said.

West Germany would welcome any offer from Australia to store its mounting radioactive waste. More than 50,000 steel drums of radioactive waste from industry are stored in buildings in West Germany.

Dr Rosenbaum said he would continue to press for international agreement on desert dumps, though "diplomatic and psychological difficulties" would slow any breakthrough.

But in Canberra the ALP spokesman on the Environment, Mr West, attacked the suggestion as "absurd" and reaffirmed the ALP's "implacable opposition" to uranium mining and any extension of the nuclear fuel cycle in Australia.

"We would be totally opposed to Australia becoming a repository for high-level nuclear waste from other countries," he said.

There were no grounds for optimism that problems encountered in waste disposal would be

solved, and both American and French nuclear program officials had confirmed that "serious research on high-level waste disposal" assumed nuclear fuel would be reprocessed.

Mr West said the ALP would "under no circumstances" approve reprocessing because it opened the way to nuclear weapon proliferation even though it eased the waste problem.

"Australia must never become a permanent repository for high-level nuclear wastes, or even a point of temporary storage for nuclear materials awaiting reprocessing or disposal," Mr West said.

The plan to use steel cylinders to store the wastes would be impractical if the proposal envisaged dumping the wastes "anywhere near salt", since the containers would be liable to rust and decompose.

Similar plans had been drafted and rejected.

Only new methods of encapsulating and storing nuclear wastes would be of interest.

## BRIEFS

OPPOSITION TO URANIUM MINING--The South Australian Labor Party yesterday reaffirmed its opposition to uranium mining, signalling grave doubts over the future of the Roxby Downs indenture bill to be tabled in Parliament next week. A special ALP State convention in Adelaide at the weekend left no doubt that if the nuclear fuel-processing cycle was central to the indenture agreement, it would be opposed in the Upper House. The South Australian Government supports the mining and processing of uranium as an integral part of the development of the giant minerals resource find at Roxby Downs in the far north of the State. Its indenture bill is an agreement specifying the terms under which the developer, Western Mining Corporation, would exploit the resource. On the second day of the special ALP convention, delegates yesterday spelled out the conditions under which the party would accept uranium development. A resolution said the ALP would not allow the mining, processing or enrichment of uranium until economic, social, biological, genetic, environmental and technical problems associated with the mining of uranium and the development of nuclear power had been solved. [Text] [Canberra THE AUSTRALIAN in English 30 Nov 81 p 1]

CSO: 5100/9006

## FINANCIAL PAPER COMMENTS ON STATUS OF TARAPUR TALKS

BK100739 Hong Kong AFP in English 0712 GMT 10 Jan 82

[Text] New Delhi, 10 Jan (AFP)--The Indian Government appears to be having second thoughts on abrogating unilaterally the 1963 Indo-U.S. nuclear cooperation agreement on Tarapur despite a recommendation to this effect by an official delegation after the last July talks in Washington, the FINANCIAL EXPRESS daily said today.

"The U.S. President's recent communication to the Indian prime minister (Indira Gandhi) is believed to have persuaded India to have second thoughts on the unilateral abrogation," the paper said in a front page lead story.

Mrs Gandhi's recent statement that any decision on the Tarapur nuclear power plant in the west coast would have to be taken in the context of overall Indo-U.S. relations gives a clue to the government's mind against rushing to a decision, the paper said.

The July talks between senior Indian and U.S. officials had ended in an impasse with both sides finding no meeting ground to resolve the issue. It had been expected that Mrs Gandhi, who holds the nuclear portfolio, would make the abrogation announcement in the recently concluded session of Parliament.

The nuclear cooperation agreement is scheduled to lapse only in 1993. The agreement, signed during the best years of Indo-U.S. relations, included a U.S. commitment for the supply of enriched uranium throughout the life of the Tarapur station and exchange of unclassified information relating to research and development, including advanced technology for the use of plutonium.

The U.S. stopped supplying the fuel after India refused to open all its nuclear installations to inspection. But the 1978 U.S. nuclear nonproliferation act provided that after a grace period, a recipient of U.S. nuclear exports must have all its nuclear activities under international safeguard as a condition of continued export.

In face of the divergent stands by both sides, India has concluded that there is little possibility of a mutual declaration to end the agreement...it also concluded that there was no point in continuing further talks," the EXPRESS said.

The American side was also not keen to abrogate the agreement because of the international impact. Many other countries might get the impression that it would be unsafe to enter into an agreement with the U.S. for nuclear supplies as such agreements would be subject to the political vagaries and domestic politics of that country, the paper said.

"Ever since Mrs Gandhi's statement that a decision on Tarapur would have to be in the context of overall Indo-U.S. relations, the U.S. is showing signs of continuing Indo-U.S. cooperation in various fields, including science and technology and oil exploration," the paper said.

"It appears that India may agree to another round of talks on Tarapur in the context of these developments," it added.

LSO: 5100/7046

## GANDHI MEETS WITH ATOMIC ENERGY COMMITTEE

Bombay THE TIMES OF INDIA in English 23 Dec 81 p 1

[Text]

## NEW DELHI,

December 22.

**INDIA** will not decide on the termination of the Indo-U.S. nuclear co-operation agreement without considering its "overall bilateral relations with the U.S."

This indication was given by the Prime Minister, Mrs. Indira Gandhi, today at a meeting of the parliamentary consultative committee on atomic energy and other scientific departments.

A member wanted to know when India was going to announce its decision in view of the U.S. failure to supply the contracted enriched uranium for Tarapur. The Prime Minister said any final decision "should ensure that the Tarapur atomic power station continues to operate."

"In taking this decision, the primary consideration must be our national interest. Apart from that, we have also to look at overall bilateral relations with the U.S.," she said.

Mrs. Gandhi said it meant some reduction in the output of the Tarapur power station because the supply of enriched uranium had to be stretched

until alternative arrangements were completed.

The Prime Minister did not elaborate further. However, it is known that the "alternative arrangements" could be using the indigenous mixed oxide fuel, developed to replace enriched uranium, or imports of enriched uranium from sources other than the U.S. Two other possible sources are the USSR and France.

The issue was raised in the consultative committee following the collapse of the official-level Indo-U.S. talks on the fuel supply issue. The U.S. has pleaded its inability to supply fuel because of its domestic anti-proliferation laws. The last round of talks in Washington had ended without even an agreement on how to terminate the Tarapur pact.

India had made it clear that it was not willing to prolong the dialogue but then it decided to wait before making any unilateral announcement. Had the U.S. secretary of state, Mr. Alexander Haig, not cancelled his visit to New Delhi, the subject might have been discussed here.

The delay in the U.S. supplies of enriched uranium earlier and the prospects of its stoppage have already led to a reduction in the generation at Tarapur since the available supplies are being stretched.

The U.S. can continue to default on supplies without formally saying

that it is terminating the agreement. India will have to take a decision on its own since it will require reprocessing of spent fuel from Tarapur which is not being done under the present agreement.

The parliamentary consultative committee also discussed the activities of the departments of space electronics and science and technology.

Regarding developments in space technology, the members were told that India would achieve the capability of launching 800-kg. class satellites into sun-synchronous orbit in the next six years.

The committee was told that establishments of the space department were not "industry" as defined in the Industrial Disputes Act, 1947. In sensitive areas, any situation where workers could be exploited by outside agencies could be extremely dangerous.

In reply to another question, the committee was told that two additional plants for the manufacture of solar cells and modules on a commercial basis were proposed to be set up.

The minister of state for science and technology, electronics and environment, Mr. C. P. N. Singh, participated in the discussions. Among the members present were Mr. K. C. Pant, Mr. M. S. Sanyal, Rao, Mr. Digvijay Singh, Mr. Nihal Singh Jais, Mr. Hari Krishan Shastri and Mr. E. Elanandan.

CSO: 5100/7043

## PRESS REPORTS STATUS OF KALPAKKAM NUCLEAR PLANT

## Heavy Water Awaited

Madras THE HINDU in English 15 Dec 81 p 9

[Text]

KALPAKKAM Dec 14

The Madras Atomic Power Project at Kalpakkam is all set to produce and feed 235 megawatts of power into the Tamil Nadu Grid from March next year.

Indicating this to newsmen who visited the power station today, Mr. M. Hariprasada Rao, Chief Project Engineer, was confident that the Department of Atomic Energy would secure adequate quantities of heavy water in time to commission the first unit in March next.

The Government had assured the Lok Sabha a few days ago that the first unit would be on stream by March next.

We are very hopeful that the Government will procure the requisite quantity. It will be either six months from now or three months after receipt of imported heavy water," he said.

Mr. Rao said a minimum of about 240 tonnes of heavy water would be needed for commissioning the plant and they now had about 35 tonnes from their own upgrading plant.

MAPP project scientists said the DAE had told MAPP to be in a state of readiness six months back, saying that heavy water would be rushed around May-June 1982. This was the first time that DAE had sent them a message of the kind.

The total production of heavy water from the four plants located at Baroda, Kota, Talcher and Tuticorin was only about 30 tonnes. These units would not be able to supply the 200 tonnes required to generate full power. About 30 to 40 tonnes of spent fuel had

been secured from Rajasthan for the plant.

Newsmen who visited the various installations on the 25 hectare complex were told that construction work consumed almost the entire project cost of Rs 210 crores.

Exotic process: Commissioning activities in nuclear power stations, unlike as in conventional power stations assumed a sort of exotic and sensitive importance, Mr. Rao explained. Sometimes they stretched over a period of two to 2-1/2 years. During this period, the installations were critically inspected and only then cleared for operation.

To save on overall commissioning time, the conventional system was started even in 1979-80, while the nuclear systems were being got ready. By the beginning of the current year work on the nuclear systems also had been completed.

During this period, light water was used for commissioning nuclear systems. A stage had been reached where the systems could be dried and poised for filling with heavy water and regular operation in about three to four months.

Major reactor equipment for Unit II, like end shields, calandria and dump tank, had been installed and aligned. Erection of the shield tank was nearing completion. The other remaining activities such as coolant channel and feeder installations were in progress.

The primary heat transport and moderator systems had been built and tests completed. The alignment of high and low pressure cylinders and

generator rotor was under progress. Piping for the turbo-generator system had been completed. It was now ready for oil flushing.

The installation of main plant equipment, cabling and lighting was nearly complete. An electrolytic type heavy water upgrading plant, designed by engineers from the Bhabha Atomic Research Centre, had been brought into operation.

Indigenisation: Replying to questions about indigenisation of equipment, he said only about 20 per cent of the project money had been spent on imported special materials in the Rajasthan Station (RAPS). The foreign exchange component was more than 50 per cent.

The fuel bundles would be fabricated at the Nuclear Fuel Complex at Hyderabad. The natural uranium for the fuel bundles would come from Jaduguda in Bihar and processed at the mine head itself by another public sector undertaking.

The two reactor units required approximately 3,180 million litres of water daily for condenser cooling purposes. The water was drawn from the sea through a submarine tunnel, 488 metres long and 3.8 metres in diameter.

Another novel feature of the station is the indoor switchyard housing all indoor circuit breakers, isolators and other related equipment. After studying the experience of other coastal stations in the country and abroad, it was concluded that it would be better to have an enclosed switchyard at Kalpakkam where salinity in the atmosphere was high, Mr. Rao said.

Bombay THE TIMES OF INDIA in English 15 Dec 81 p 9

[Excerpt]

Kalpakkam also marks the coming of age of the Indian atomic energy programme, as full responsibility for the execution of the project, including the design, engineering, construction and operation, rests with Indian personnel.

Only 20 per cent of the station's cost, mostly for the import of special materials, will be in foreign exchange, compared to the RAPP where the foreign exchange component was more than 90 per cent.

Indian industry is now fabricating important reactor components including the reactor vessel, the "Calandria," and the fueling machines.

A special feature at Kalpakkam is the pre-stressed concrete reactor building design — one of the first double-shell nuclear containment in the world for each reactor system. The 65-m. thick perimeter wall of pre-cast concrete forms the inner shell while 71-cm. thick reinforced rubble masonry walls form the outer shell. "This design provides a highly leak-tight containment structure even in the absence of an expensive steel containment," Mr. Rao said.

The two reactor units require 3,100 million litres of water daily for condenser cooling purposes. The water is drawn from the sea through a 3.8-metre diameter submarine tunnel, 65 metres below grade level and 468 metres long.

Another novel feature is the adoption of a closed indoor watchyard for housing all the circuit breakers, isolators and other equipment. This was thought technically necessary at

Kalpakkam where salinity in the atmosphere was high.

The Kalpakkam station has had to face several snags. The go-ahead for the project was given in 1979 and the order for equipment placed in 1972. The completion of the first unit had been stretched from 1974-75 to 1981, first by the world crisis of inflation in 1972, and later the Pokhran atomic explosion which made Canada withdraw its aid. The original cost estimate of Rs. 149 crores has now reached Rs. 216 crores.

There is also uncertainty about the availability of heavy water in the country because of the difficulties faced by the Boroda and Tuticorin plants as well as the one at Tarapur — all three linked to fertilizer projects. The one at Kota is designed as a straight forward heavy water plant.

Mr. Rao said the half a dozen or so new heavy water plants coming up during the sixth plan would not be linked to fertilizer projects and would most probably have their own captive power generation to ensure unbroken power supply — a must in the heavy water manufacturing process.

The top class engineers and scientists at MAPP, with 14 to 20 years' experience in the reactor field all over the world, backed by highly skilled technicians, are keenly looking forward to making Kalpakkam operational. It is now up to the department of atomic energy to provide the necessary charge of heavy water which incidentally, is known to be commercially available in Canada and elsewhere.

CSO: 5100/7041



## NARORA NUCLEAR PLANT UNITS BEHIND SCHEDULE

New Delhi PATRIOT in English 12 Jan 82 p 5

[Text]

The two units of the Narora atomic power project in Uttar Pradesh are behind schedule by about five years, according to official sources, reports UNI.

The Narora project which has two 235-MW heavy-water reactors, which were scheduled for completion in 1981 and 1982 respectively, are expected to be completed by 1986 and 1987 respectively.

The reasons for the delay include delay in the delivery of major nuclear components, finalising designs after conducting seismic analysis and problems faced in the initial stages in land acquisition for the project.

Narora is the fourth atomic power project in the country.

The Narora reactors have several new design features and concepts, including earthquake resistant design of the buildings and reactor components.

The other new features of the reactors are an integral Calandria-shield assembly, two independent fast-acting shut down systems for safety and reliability and a simplified water-filled Calandria vault.

These new features are being brought about following the problems faced by the authorities in the first unit of the Ra-

jaasthan atomic power plant.

Besides, the Narora designs are being standardised and the Government proposes to repeat this design in the fifth plant to be located in Kekarpara near Surat in Gujarat. This would be a cluster of four units of 335 MW each.

The cost of the Narora project was revised only last year from Rs 209.98 crore to Rs 327.40 crore.

The project cost was revised due to, among other things, escalation in the cost of imported and indigenous equipment and design changes.

As a result of undue delay in completion, the project cost is likely to go up further.

At present the department of atomic energy is engaged in designing 300 MW nuclear power units.

It is proposed to start construction of six reactor units of 235 MW each during the sixth plan period. These are two units at Narora and four units at Kekarpara.

India has gradually achieved self-reliance in building the atomic power stations following intensified efforts at using indigenous resources.

CSO: 5100/7045



## BRIEFS

NEW URANIUM FIND--Dehra Dun, December 16 (UNI)--Huge uranium reserves have been located in the Balganga valley of Tehri Garhwal district of Uttar Pradesh. Geologists of the mineral division of the Atomic Energy Commission have found five deep shears of the metal near Dhar Gaon, Sileth, Kangra and Domri in the Chamayala region of Balganga valley. This was disclosed in a paper presented at the twelfth Himalayan geology seminar organised by the Institute of Himalayan Geology here recently. [Text] [Bombay THE TIMES OF INDIA in English 17 Dec 81 p 21]

CSO: 5100/7042

# MUSLIM COUNTRIES 'NEED FOR NUCLEAR ENERGY STRESSED'

Karachi THE MUSLIM WORLD in English 2 Jan 82 p 1

[Text] Rodney W. Jones in his article entitled "Atomic Diplomacy in Developing Countries", writes:

Besides the general dearth of the energy resources for the whole world, the immediate effect of higher oil prices, the political embargo on supplies of oil led to an increasing awareness about the value of energy."

Now the industrialised countries are conscious of the importance of oil as weapon and they have reduced their dependence on oil as a fuel. The Western European countries total electrical generating capacity by nuclear technology will be about 70 per cent in 1990, 10 million tons of oil equivalent by 1990.

Mr. Munir Ahmad Khan, Pakistan's Atomic Chief, in an interview to magazine "New Scientist" said that in the US an average citizen consumes some 10,000 units of electricity per year. In Europe this consumption is between 6,000 to 9,000 units per capita. The world average was more than 300 units per year, whereas in Pakistan the average consumption of electricity was hardly 100 units per person. Pakistan has few other energy resources. The US can consume Pakistan's entire reserve of coal, oil and gas in just

one year. It is incumbent on the Third World to adopt the nuclear technology in order to meet their needs.

The World Muslim Congress (Motamar Al - Alam Al - Islami) feels it necessary for Islamic countries to pool their resources together and utilize it for meeting the needs of development of nuclear energy in the Muslim world.

5100/4515

BRIEFS

SHAHI ON NUCLEAR PROGRAM--The Foreign Minister of Pakistan, Mr Agha Shahi, has said that Pakistan has made no commitment regarding its nuclear programme in return for the American aid. In an interview with the Asia editor of the FINANCIAL TIMES, London, Mr Shahi reiterated that Pakistan had no intention to make nuclear weapons. But, he added, there was a vast difference between a nuclear explosion and acquiring nuclear weapons. If Pakistan needed a nuclear explosion for its nuclear programme, it could not be ruled out, Mr Shahi added.--BBC. [Text] [Karachi DAWN in English 16 Jan 82 p 1]

CSO: 5100/4516

BRIEFS

URANIUM PLANT--The Republic of China has set up a plant for extracting uranium from phosphoric acid. This plant, the first of its kind in Asia, has been running satisfactorily and is expected to extract 10 dun of metallic uranium from 120,000 dun of dilute phosphoric acid annually. According to the nuclear energy research institute, which designed and built the plant, the output of uranium will be sufficient to fill the needs of its experimental heavy water reactor. More important, the successful operation of this plant will enable the Republic of China to export the highly sophisticated uranium extraction technology to foreign countries. [Taipei CHUNG YANG JIH PAO in Chinese 29 Dec 81 p 1 OW]

CSO: 5100/2083

## BRIEFS

AUSTRALIA TO SUPPLY URANIUM NEEDS--Australia expects to supply all the uranium needs of the Philippines' first nuclear power station through the 1980s, with the exception of the first charge, Australian Ambassador Richard Woolcott said. He understood that it was still the Philippine government's intention to purchase uranium from Australian suppliers. The plant, now under construction, would require 840 tons of "yellow cake" (semi-processed uranium) between the start of its operations in 1984 and the end of the decade, he added. Woolcott said the Philippines "does not want all its eggs in one basket" and was thus making contingency arrangements with others. But he said there was no obstacle to what Australian Prime Minister Malcolm Fraser promised in 1979 would be a regular and reliable supply of uranium from Australia. A bilateral safeguards agreement was signed between the two countries in 1978 and the Australian trade unions had recently decided to lift a ban on uranium shipments. The initial charge for the nuclear power station being built on the Bataan peninsula by Westinghouse is expected to come from the United States or Canada. Woolcott said Australia was also expected to export coal to the Philippines during the 1980s to help meet its growing energy needs. Australians were also assisting Filipinos in developing their own coal reserves. The ambassador, who described the expansion of economic links between the two countries in recent years as very satisfactory for both sides, said such energy imports were bound to affect the trade balance between the two countries. [Manila BULLETIN TODAY in English 25 Jan 82 p 19]

5100/4109

## REPORT OF 1981 PROGRESS IN BUILDING DUKOVANY NUCLEAR POWER STATION

Prague RUDÉ PRAVO in Czech 17 Dec 81 p 3

[Article by Vratislav Doufal, Frantisek Balas, and Miloslav Vltavsky: "What has this year brought in the construction of the Dukovany Nuclear Power Station--a third year concluded, a more difficult one beginning"]

[Text] The builders of the Dukovany nuclear power station will be able to toast the coming New Year in a better mood than was the case last year. It is obvious now that in spite of all problems, difficulties, and worries, the situation has taken a turn for the better in many of its aspects. The value of completed construction for the past year was over Kcs 900 million (deliveries and equipment assembly were Kcs 264 million). It is a record at a time when there are problems with unfinished constructions. Even with the records though, certain specifics of the schedule were not met.

At the beginning of this year even the construction people themselves had their doubts about the mentioned Kcs 900 million. Other participants in the construction did not believe in this figure either, although all these people knew that it was a requirement to accomplish as much. The experiences of past construction schedules, when delays kept growing into bigger and bigger proportions, made the meeting of this year's section deadlines seem somewhat like a dream. Even if the fulfillment to the extent of this huge sum is a reality, it gives evidence of the construction workers' extremely serious attitude towards the changes in the structure of the requirements laid on them. After all, this is the first nuclear power plant not only for the Brno Industrial Builders, but also the first one for the enterprises of the Czech Ministry of Construction, and only the second one in our country.

This is the very first time, though, that four power units are being built in such a way that their start-up comes in smooth sequence. What is involved, then, is gaining experience quite essential for the building of other power complexes being planned for Southern Bohemia and other locations.

#### Accelerate the Process

Now there is a concentration of 6,200 working people, mostly construction workers, on the hillside near Trebic. It is necessary to keep these people occupied with meaningful work assignments which should be not only directed, but also checked, and their results examined. All employees are to be fed, transported

to the construction site and back, and most of them also housed. Up to now there has been a lack of experience in organizing building projects of such magnitude in this country.

With all that has been done up to now, the efforts are suggesting a further expansion of the work team. Within the next year the construction site is expecting another 1,000 construction workers, 1,500 equipment assemblers, 500 future operations employees, etc. These more than 9,000 people on a single construction site are expected to achieve further production records. The value of construction and materials should reach Kcs 1.2 billion, the supplies and assembly of technological equipment over Kcs 1.75 billion. Next to increased demands for transportation, lodging, catering, and other services, it will be necessary to substantially improve the organization of work of all the suppliers, the coordination of individual tasks for which investors are responsible, as well as the responsible activities of project managers and other employees.

Every accomplishment is to be assessed on the basis of the effort which has gone into it. In this instance it is given by the individual 440 megawatts unit start-ups in 1-year intervals. Between the third and the fourth unit there is an interval of only 9 months. Without any doubt this is a challenging and responsible job for the entire team of builders.

It is not surprising that, with an assignment stated this way, the construction workers were justifiably pleased that after so many failures they at last managed to meet one of the very important deadlines which was the construction readiness for the erection of steel framework for the first production unit. We wrote about it more than 3 months ago (R.P. of 30 September 1981), as well as about the management from the Ostrava Hutní Montáže which agreed with higher-level material suppliers on the appropriate work schedule, and on an organization which would ensure successful fulfillment of economic contracts. At that time we complimented them on their approach to the undertaking in Dukovany: as has been shown, somewhat prematurely.

#### Responsibility Comes First

At the end of November there was still a shortage of workers for this task. This cannot be glossed over by the fact that with complete fulfillment of the concluded economic contract, they were able to keep postponing their arrival for the erection of steelwork at the first production unit and still be formally adhering to the letter of the law.

However, there is also a moral side to the construction of the most important investment in our country. The start-up of this power plant will decide whether our people will have enough electricity in their homes and at their workplaces. In other words--there is the responsibility to our entire society. In these circumstances, the right person is not the one who is better able to juggle legal technicalities, but the one who fulfills his or her task even in inclement weather, and even under the conditions of unpleasant obstacles. The heroes of labor--and there are many of them here--cannot let themselves be bothered by the unpleasant autumn wind blowing around Dukovany.

But we are not concerned only with the feelings of individuals. Entire teams of construction workers did their best to achieve the construction readiness for the erection of steelwork. Their initiative has brought the expected result.

Comradely negotiations between the representatives of the Construction Site Committee of the Czech Communist Party in Dukovany, and the Party Committee of the Hutni Montaze enabled an earlier arrival of the workers from Ostrava on the site. However, the assemblers are now in an unenviable situation of having to catch up with a delay which could have been avoided.

#### The Meaning of This Construction

So far, the construction setbacks are not quite settled yet. The worst off are the subcontractors from Ingstav Brno. It is not only a question of the electric power plant and its operating facilities, but also of the public utility network in the town of Trebic, which will become the new home for the future power station operators. Their arrival is approaching and the question of their housing needs cannot be delayed. They will hardly come to work in a far-away power station if there is no possibility to move into new apartments with their families. Any delay in the complex housing construction is therefore to be understood as a considerable threat to the power station operations.

The mentioned Brno enterprise is definitely in an unpleasant position. The fact is, of course, that it will primarily have to help itself; although in some cases this will not be possible without the assistance of higher authorities. They concentrated a large number of people at the power station site, but they still lack certain skilled categories. First of all, there is a shortage of carpenters (higher contractors have the same problem) for the erection of monolithic concrete structures in which the site abounds.

In Dukovany they will have to replace carpenters and welders from Poland who have worked here up to now, and whose contracts have run out. In addition to this type of craftsmen they will also need more construction iron workers. This is a task not only for enterprises participating in this development, but also for other ones, for VHM, the Czech Ministry of Construction, and evidently also for other branches of industry. Yes, it is essential to look for a responsible way out of the blind alley in which the construction could be temporarily stuck. The building industries will have to do more than they have up to now, and especially at this moment, when many of the skills are being replaced by others. They are directly responsible for the construction, together with heavy engineering and power industries. Nobody is going to relieve them of this responsibility, but again, they cannot do without the comradely assistance of other branches of industry. The construction of a nuclear power plant is an undertaking of such magnitude that it cannot be a business only of several involved teams.

Most of the workers on the site have already grasped that what has been enough on other construction sites is not sufficient for coping with the tasks here. The situation here is much more complicated because the construction workers do not yet have adequate experience in building nuclear power plants, and are not familiar with the new technical and organizational problems either. Everybody is learning on-the-job, so to speak. That is why here, more than anywhere else, everything depends on effective cooperation and keeping of the necessary



discipline. In spite of all this, the workers overcome new obstacles daily, hastening the construction to its conclusion. The communists here have shown an exemplary ability to approach and cope with individual tasks; they are organizers of the initiatives and of their fulfillment. Their activities are based on the decree of this year's January party conference, as well as other party documents dealing with Dukovany and further improvements in the local construction.

#### To Learn From Experience

People on the construction site have many urgent tasks on their hands. The first is to improve the management, and thus enable more efficient utilization of all the workers here. We could also mention the need for further improvement of services, etc. All this is necessary, and it is under constant supervision of the highest party authority on the site. However, there are many problems which cannot be solved here--such as hiring more workers of certain skills, or ensuring a smooth supplier-purchaser cooperation. The most significant investment in this country should never lack anything. Its importance should be a guide in adjusting the production capacities of individual subcontractors. Nevertheless, even here we still have failures, although the supplying of materials for the first production has basically improved.

The next year will be one of difficult trial for all the employees: the management and the work teams, both communist and nonparty workers. It will be a test of their responsibilities and determination. In many aspects the course of this year has been instructive, and its end hopeful. If this year's experience has been fully absorbed, it will be possible to complete most of the next year's tasks within their given deadlines.

Vratislav Coufal, secretary-in-chief of the Regional Committee of the Czech Communist Party in Trehic;

Fratisek Dalas, Chairman of the All-Union Communist Party Committee in Dukovany;

Miloslav Vltavsky, Editor of the RUDE PRAVO.

9910

CSO: 5100/3008

## ARGENTINA

### CHUBUT PROVINCE SELECTED AS POSSIBLE NUCLEAR STORAGE SITE

Buenos Aires CLARIN in Spanish 23 Dec 81 p 39

[Text] Rawson -- A major CNEA [National Atomic Energy Commission] project will give the Gastre area, about 350 kilometers northwest of this capital city, in the vicinity of the border of the neighboring province of Rio Negro, a boost capable of radically turning around its present situation of poverty and backwardness, providing its residents access to new job opportunities, which are now restricted to working at livestock facilities in the area.

A field study is to be conducted at Sierra del Medio, approximately 50 kilometers from Gastre, to determine if the underground geological formation there is suitable for the installation of a storage site for fuel cycle byproducts from Argentina's nuclear plan.

The study includes the preliminary engineering work required for its possible execution; this project will complete the nuclear fuel cycle in our country.

#### Selection

The place where the investigation will be done was chosen by the CNEA along with the National University of San Juan, after a detailed survey all over Argentina; there were no limitations, except for the strict technical characteristics required for such facilities.

This evaluation has taken almost 2 years, and at the end of the rigorous final selection process from among approximately 200 sites, presumed suitable for a more indepth study, the Sierra del Medio area was found to be the best site for the CNEA to begin work to confirm the characteristics of the geological formation there, and determine if they are actually suitable for this storage site.

To start the project, the CNEA and the National University of San Juan signed an agreement for the acquisition of equipment and supplies and also for the hiring of the labor needed, from among the local labor force.

#### Infrastructure Projects

At the same time, in order to provide suitable logistic support for the program, a series of infrastructure projects has been planned for the Gastre area. These will include facilities for vehicle and machinery maintenance, for the supply of electricity and fuels, housing and other related needs. Part of these facilities, in addition to their specific use, will be available for use by the local residents.

Just during the study phase alone, the investments to be made in the Chubut area are on the order of 50 billion pesos. It is estimated that the later development of the project would cost several hundred million dollars.

An indication of the interest aroused in the province by the CNEA's project is the fact that the governor himself, Rear Adm Niceto Echauri Ayerra, came to the Gastre area to explain to the municipal authorities and to the local residents its main aspects and its foreseeable impact on the area's economy.

7679

CSO: 5100/2074

## ARGENTINA

### MADERO ANNOUNCES INCREASE IN EXPORT OF NUCLEAR TECHNOLOGY

Buenos Aires LA PRENSA in Spanish 28 Dec 81 p 5

[Text] Salta --The chairman of the CNEA [National Atomic Energy Commission], Vice Adm Carlos Castro Madero, has announced that Argentina is preparing to increase its exports of nuclear technology to other Latin American nations; he stated that Argentina is maintaining its "nuclear leadership" of the continent.

He also said that "the possibility of an agreement with the Soviet Union for technological assistance, to be implemented during 1982," is under study.

In statements made to the newspaper EL TRIBUNO, he said that "until now our trade has expanded, with the acquisition of three new rolling machines and parts for the zircaloy tube factory." Also, "the five tons of heavy water we purchased a year ago have been delivered."

#### Nuclear Technology Recipients

On the possibility of increasing Argentina's exports of nuclear technology to other Latin American nations, following the course which has already begun with Peru, he said that Colombia "has asked us to present a technical proposal for the construction of an atomic center consisting of a reactor and a radioisotope plant."

He added that "Guatemala has also asked for a proposal for a nuclear laboratory, and Uruguay has requested a feasibility study for establishing the type of atomic center that will best meet their needs."

At the same time, Mexico "has offered us an opportunity for Argentine participation; there is a possibility that the CNEA may provide training for Mexican professionals, if Mexico decides to use natural uranium, since Argentina has very extensive experience with this process," he said.

## Possibilities

He said that nuclear energy will have enormous possibilities during the decades to come. "During the 21st century, Argentina will have a very strong demand for its nuclear sector; this demand will be so great," he said, "that the construction of one nuclear power plant per year is expected."

"Therefore, the Argentine nuclear plan has been designed so that when the end of this century comes, we will be in an optimum position to handle activity in this field, with a maximum of national participation."

## Nuclear Leadership

He then reported that Argentina "is going to maintain its nuclear leadership in Latin America, because we are continuing to reach goals making us the first in this area; for example, in the manufacture of fuel elements, the processing plant, and the establishment of specialized industries."

He rejected the plan to include nuclear energy in a single agency combining the various energy sectors.

He said that nuclear energy "receives special treatment because of its relationship to strategic, security, and safety problems."

Consequently, he said, "a single organization like the one proposed would not help, but would only slow down the development of nuclear energy."

7679

CSO: 5100/2074

## ARGENTINA

### PLUTONIUM EXPORT CAPABILITY, OTHER NUCLEAR ISSUES DISCUSSED

Rio de Janeiro JORNAL DO BRASIL in Portuguese 10 Jan 82 p 26

[Article by Rosental Calmon Alves]

[Text] Buenos Aires--Within 7 months, Argentina will put into operation the first pilot plant for reprocessing uranium in Latin America, giving rise in the future to an industrial unit for the production of plutonium, which may be exported as part of the country's strategy to control the Latin American nuclear market.

The chairman of the National Atomic Energy Commission (CNEA), Vice Admiral Carlos Castro Madero, declared that his country is progressing rapidly toward mastering the technology of the complete nuclear energy cycle despite international pressures.

#### The U.S. Versus the USSR

Adm Carlos Castro Madero said that the competition between Brazil and Argentina to gain the Latin American nuclear market "should not imply a rift between the two countries if both act faithfully, respecting international rules." He asserted that "for the time being, there is nothing" with regard to a Brazilian-Argentine pool for the export of nuclear equipment to Latin America, but he added:

"We may evaluate that later."

In recent years, the United States has maintained the most intransigent position with regard to Argentine nuclear development, while the Soviet Union which normally takes the same position, has somewhat softened its hard line toward Argentina in the international agencies and has taken the opportunity to sign commercial contracts with the Argentines in this field. Naturally that has irritated the Americans even more.

With the inauguration of the new government, there is great expectation in Buenos Aires regarding what is happening in the nuclear sector due to the tendency toward greater rapprochement with the United States expressed by the Galtieri administration. Admiral Castro Madero believes that his area will come out all right.



"I do not believe it will be hurt. On the contrary, I believe that relations with the Americans in the nuclear sector can only improve because at the present time the dependence of the Argentine nuclear program on the United States is practically nil. For that reason, the only thing that can happen is an improvement because relations and cooperation in our field with the United States could not be worse," he said.

But if one side has to give in, will it not be Argentina?

"I do not believe so because the Argentine position was always very clear, very responsible, and I believe that the United States perceived that it's action toward Argentina was not correct. Therefore, we expect the United States to improve [relations]," said the CNEA chairman.

He explained that for the time being there is no scientific and technical cooperation agreement between Argentina and the Soviet Union, although talks are under way in that regard which could lead this year to the signing of such an agreement. After that specific cooperation in the nuclear field between Moscow and Buenos Aires could be discussed.

"Up to now, there have been commercial agreements in 1980 under the safeguards of the International Atomic Energy Agency (IAEA). The Soviet Union supplied Argentina with 5 tons of heavy water which we use to replace occasional losses at the Atucha-I plant. In addition, we received rolling machines for our zircalloy pipe factory.

"And now we are about to conclude a service agreement for the enrichment of our uranium (in the Soviet Union) for the production of fuel elements intended for the radiation reactors that operate in the Atomic Center of Ezeiza (in Buenos Aires). All these are commercial agreements in which there is a supplying of a service and the delivery of money, nothing more," he explained.

#### Agreement With Brazil

The chairman of the CNEA said that "the cooperation agreements signed between Argentina and Brazil are being implemented satisfactorily." As envisioned, last year Argentina supplied Brazil with 120 tons of uranium concentrate, on a loan basis, and this year it will supply another 120 tons.

The Argentines have begun to prepare production of the 140,000 meters of zircalloy pipe that will be sold for use in Brazilian nuclear plants, and the Brazilian Nuclear Corporation (NUCLEBRAS) has begun to inspect the initial manufacturing work to check quality control.

The NUCLEBRAS Heavy Equipment Corporation (NUCLEP), a NUCLEBRAS subsidiary, has begun preparations for production of the lower part of the pressure vessel to be used by the Atucha-II plant, which is being built near Buenos Aires. Admiral Carlos Castro Madero said that he does not know exactly how much Argentina will pay for that equipment because it was KWE, charged with the construction of Atucha-II, that contracted NUCLEP's services. There is only an overall price to be charged by the German company. He said, however, that the cost of that equipment is equivalent to that of the zircalloy pipes that Argentina will supply to Brazil.

The chairman of the CNEA does not agree with the criticism that has appeared in Brazil to the effect that the exchange with Argentina would be disadvantageous to NUCLEBRAS, which would receive a product of highly sophisticated technology (the zircalloy pipes), whereas, it would furnish heavy equipment that could be built in any Brazilian steel mill.

That is not true. To produce the lower part of the pressure vessel for Atucha-II, it is necessary to have special equipment and personnel specialized in over-seeing and welding tasks of a very high quality. I do not believe any Brazilian steel mill could do that. The only one with that capability is NUCLEP," he said.

Further, in the plans for nuclear cooperation between Brazil and Argentina, there has not been any reference to a common project for reprocessing uranium, as was reported in Rio.

That topic was not mentioned during the talks because Brazil has its plan and is associated with Germany to build its reprocessing plant, and we have our own plant. I also believe that there are certain restrictions on the exchange in this field. Under its agreement with Germany, Brazil is not free to transfer information to Argentina and, therefore, that has been taken into consideration until the present time.

#### Export of Plutonium

Although it is not considering cooperation with Brazil in that sector, Argentina has quite definite plans for the uranium processing sector, even though the system used by its nuclear plants for the production of electric energy is powered by natural fuel.

Admiral Castro Madero revealed that work on the pilot plant for reprocessing uranium in the Atomic Center of Ezeiza, in Buenos Aires, has entered its final phase.

The chairman of the CNEA announced that that unit will begin operation in August and Argentina plans to develop there its own technology to extract plutonium from the fuel (uranium) elements irradiated (spent) in the electric plants (Brazil will import its from Germany).

That worries particularly the United States, which says it fears the proliferation of nuclear weapons, since the atomic bomb is made with plutonium. But Admiral Castro Madero explains that plutonium does not have only military purposes.

Plutonium is an energy element. The fuel elements (uranium pellets) irradiated in Atucha-II, Embalse and the other plants represent a plutonium mine but it is necessary to know how to extract the energy mineral from that mine. "We want the mine for three reasons:

1. It can be used in the same energy-producing atomic plants. In the case of natural uranium (adopted in the Argentina plants), when plutonium is used, it presents the advantage of reducing uranium consumption by 50 percent; that is, if we mix plutonium, we need only half the amount of uranium to produce the same amount of energy.



"2. Since it is believed that in the next decade the breeder reactors, which are fueled by plutonium, are going to appear in commercial operation, that will most certainly give rise to an increase in the price of plutonium. Therefore, Argentina can use it as (commercial) exchange goods, removing the plutonium it has stored in the irradiated fuel elements.

"3. A very important point also is the fact that Argentina wants to be an exporter of technology in Latin America. Considering that it is a very competitive market, inasmuch as there are powers interested in that area, we want to be on an equal footing, that is, not at a disadvantage, because we have not mastered a very important phase of the fuel cycle, namely, reprocessing," declared Admiral Castro Madero.

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# PARTICIPATION OF PRIVATE SECTOR IN NUCLEAR DEVELOPMENT EXPANDING

Buenos Aires ENERGEIA in Spanish Dec 81 No 20 pp 480, 486

[Article by Martin F. Yriart: "Nuclear Fuel in Private Hands"]

[Text] The approval for the establishment of CONUAR [Argentine Nuclear Fuel Corporation] through a decree of the National Executive Body has put an end to an extended exploratory process and has started a decisive phase in the materialization of one of the key goals of the Argentine Nuclear Plan: the nation's self-sufficiency in the area of nuclear fuel.

Simultaneously, another step has been taken toward the incorporation of the private sector into Argentine nuclear development. This second goal, which was announced at the beginning of his administration as head of the National Atomic Energy Commission [CNEA] by Vice Admiral Castro Madero, has not always been easy to implement in the context of an economy submerged in inflation and recession in its industrial sector.

Thus far, the private sector's participation had been carried out in mining projects (such as San Rafael, Los Gigantes and La Estela), engineering projects (such as the work done by Nuclear and Argator at Atucha I, Embalse and Project Peru), or in supplies of heavy equipment (such as the pressure tank for the TANDAR accelerator or the inlaid components of the RP-10). More recently, there have occurred the contracts given to IMPSA [Pescamona Metallurgic Industry, Inc] and other local firms for the supply of equipment and services to the Atucha II Nuclear Powerplant.

But in all these instances the companies in the national private sector have served as subcontractors for CNEA or a foreign main contractor, and their management of operations and projects has come under the direction of CNEA.

Excluding the Sierra Pintada project, the resolution of which has been delayed, that of the Ezeiza Nuclear Fuel Elements Factory (FECN) is the first one wherein the private sector has assumed critical responsibility, with a major contribution of capital and experience. To be sure, CONUAR is receiving a virtually complete plant, which will start operating with a technology that has been already mastered, and which will incorporate new contributions from CNEA in this area as the manufacturing lines for Embalse and Atucha II go into effect. And it will also be a "captive" company, inasmuch as it is receiving the infrastructure, technology and supplies from the one that will be the only customer for its product. However, none of this detracts significance from the private participation in the project.

CONUAR has been established with a share of 75 percent private capital and 25 percent on the part of the National Atomic Energy Commission. At the time of establishment, the Perez Companc economic group, through a subsidiary created for this purpose (Pecom Nuclear, SA) is unconditionally buying 50 percent of the capital stock, and CNEA 25 percent. The remaining 25 percent is being assumed temporarily by both, in the same proportion of two to one, until a new investor is selected to complete the planned private package. The search for the latter is already under way, although the background on the project indicates that it will not be easy.

The initial selection process began over 3 years ago, and at first led to the establishment of a consortium comprised of Vialco, Tamet and United Investments. The well-known financial crisis of the group which was controlling the latter two firms left Vialco as the only survivor of the consortium at the end of last October. A new search attracted Perez Companc, which took two thirds of the private package. Subsequently, however, in June of this year, Vialco showed up at the tentative creditors' meeting, a situation which made its exclusion from the consortium virtually necessary.

Meanwhile, the starting of the plant has become unpostponable, because last March CNEA decided not to make use of the pending option for a new shipment of Atucha I type fuel elements included in the last contract with Reaktor Brennelement Union (RBU) of the Federal Republic of Germany. The selection of the new private partner that will cover 25 percent of CONUAR's unsettled capital comes under the exclusive authority of CNEA.

Meanwhile, the Nuclear Fuel Elements Factory will have to be in a position to start production for Atucha I next February. CONUAR will operate leasing the plant facilities from CNEA and purchasing from it and from third parties the necessary equipment and input. The zircaloy cladding and semi-finished products will be of imported origin initially. The uranium dioxide will be supplied by CNEA, "in use" and not in sale.

With the complete operating system (with the three lines for Atucha I, Embalse and Atucha II), the plant will use 45 tons of zircaloy and 340 tons of uranium dioxide per year. At first, that dioxide will be made in the Federal Republic of Germany from Argentine uranium concentrate. Starting in 1983, the conversion of the concentrate into dioxide will be carried out at the CNEA Cordoba Plant.

CONUAR's initial production capacity will be about 400 fuel elements per year, and the deliveries, at an approximate rate of 30 elements per month, will start in the middle of next year. During the following 2 years, reduced series of CANDU type fuel elements will also be produced, to be sent to the Embalse Nuclear Powerplant which will be supplied totally by CONUAR starting in 1985. The manufacture of the first core of the Atucha II reactor will take place between 1985 and 1986, and beginning in 1987 CONUAR will provide all the fuel to feed the Atucha I, Embalse and Atucha II Powerplants.

The plant design has sufficient internal reserve areas to increase its capacity and enable it to supply fuel to the other powerplants in the Argentine Nuclear Plan, with the possible addition of some independent buildings that would supplement the present covered area.

Nevertheless, making FEEN a private establishment, which may be regarded as a good example of the implementation of the principle of subsidiary status of the state, has not failed to bring up some points for discussion. The first is related to CNEA's participation in the capital of CONUAR, which at first glance might be considered a new cause of outlays for the already quite diminished public treasury. The solution which has been adopted is aimed precisely at avoiding this. The FEEN project and works were begun long before the incorporation of the private sector was decided. And once that was resolved, it continued ahead, because it was impossible to keep it waiting for the partner to appear. Moreover, in the Constituyentes Atomic Center's Fuel Elements Pilot Plant, a set of industrial equipment had been collected making up the production line for Atucha I. The CNEA share in CONUAR's capital stock has taken place by cashing in on that equipment and material, without a need for other outlays.

The other point which deserves particular consideration is the value of the intangible assets generated by CNEA in the nuclear fuel technological development program. In this instance, it has been arranged for CONUAR to pay CNEA a "fee" for the use of the technology.

It would certainly be exaggerated to talk about a "model for transfer of technology" or an "archetype for relations between the state and the private sector in the promotion of top industries;" but the experience of FEEN will most likely have an influence in the future on the policy to be adopted, not only for the applied industry, but also for Argentine technological development in general.

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# URANIUM DIOXIDE CONVERSION PLANT TO START OPERATING BY MID-1982

Buenos Aires ENERGEIA in Spanish No 19, Nov 81 p 425

[Article by Martin F. Yriart: "The Uranium Production Cycle Is Closed"]

[Excerpts] During the second half of 1982, the uranium dioxide conversion plant, the installation of which the National Atomic Energy Commission [CNEA] is completing at present with equipment of German origin in the Cordoba Manufacturing Complex, will go into production.

The conversion plant, which is now being completed, has been established on the basis of the facilities which already exist at the CNEA's Cordoba Manufacturing Complex. There is a line there for nuclear purification and extraction of the uranium from the yellow cake using highly selective solvents (tributylphosphate), which makes it possible to obtain an aqueous solution of uranyl nitrate. This line was designed and built by CNEA.

To complete it, Reaktor Brennelement Union GmbH (RBU), of the Federal Republic of Germany, has supplied a package consisting of an ammonium uranylcarbonate precipitator-crystallizer, filters, a fluid base reduction furnace in a hydrogen environment, two homogenizers and other peripheral equipment that will make it possible to complete a production line with an annual capacity of 150 tons of dioxide. That is the capacity guaranteed by RBU, but CNEA expects to achieve a higher yield, which will enable it to meet the fuel needs of Atucha I and Embalse with that facility alone.

The total investment would amount to about 47 million, and the main contractor for the project in this case is Nuclear Mendoza, SE, the company created jointly by CNEA and the government of Mendoza. The adaptation of the plant will begin in February 1982.

## Dioxide: an Inevitable Need

Work is under way at the Cordoba Manufacturing Complex on the adaptation of another nuclear purification process, extraction by amined solvents and the obtaining of ammonium uranyltricarboxylate crystals, with completely native technology. This was developed from a joint Argentine-French patent originally devised to obtain commercial concentrates.

This native line has been completed with a temporary facility for calcination of the tricarbonates and its conversion into uranium trioxide, and two Thermax-Degusa reduction furnaces in a hydrogen environment constructed in the country. The tricarbonates crystals, which are subjected to a physical rounding off process, keep their shape through the calcination and reduction operations. The result is a fluid powder which can be directly compacted and then sintered.

The adaptation of this process is in a very advanced phase, with work being done currently on the optimization of the density of the final cake. When this goal has been attained, the country will be in a position to expand its dioxide production capacity in proportion to the increase in its requirements, without having to resort to sources abroad.

Plans now call for the resizing of the facilities for this second dioxide conversion line, so as to reach a production on a regular basis of 150 tons per year, thus actually doubling the capacity of the Cordoba Manufacturing Complex.

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CSO: 5100/2082

## BRIEFS

RADIOACTIVE WASTE AT ANGRA I--Rio de Janeiro--CNEN, the National Nuclear Energy Commission, has decided to keep both low and high level radioactive waste at the Angra I facility for the next ten years. The possible completion of the planned reprocessing complex could affect that decision, however. Low and mid range waste consisting of tools, clothing, and equipment, will presently be stored in 55-gallon drums at the facility. A suitable storage site away from the facility, in an area of low population, far from agricultural production, with wells and water access, has not yet been found by the CNEN, although Cesar Cals stated that an island off the Angra coast might be used. High level radioactive material will be stored in the Angra I cooling tank, which has an estimated ten-year capacity. The tanks have a capacity for 363 elements, or three full loads. It is now estimated that the fuel will be spent in approximately 126 months. The planned reprocessing center may be constructed at Biriricas and Baicacu near Santa Cruz, State of Espirito Santo. [Excerpts] [PY241939 Rio de Janeiro LATIN AMERICA DAILY POST in English 23 Jan 82 p 7]

CSO: 5100/2083

## BRIEFS

CONCERN OVER NUCLEAR CAPABILITY--Prominent Israeli nuclear experts voiced profound concern over the nuclear activities of countries of our region in the wake of recently released information which confirms earlier information arrived at by Israel. The experts told our correspondent, Gadi Sukenik, that, in their view, a warning should be sounded in view of the intentions of Kuwait, Saudi Arabia and Egypt to purchase from Canada up-to-date nuclear power reactors producing, as a byproduct, plutonium, the substance needed to build an atom bomb. All this is in addition to the nuclear race in Iraq and Pakistan. The experts believe Pakistan is already in possession of such a bomb. They emphasized that Canada is very involved in the nuclear race in the region. They said Israel should reassess its strategic preparedness in the nuclear sphere. [Text] [TA280629 Jerusalem Domestic Service in Hebrew 0500 GMT 28 Jan 82]

CONTACTS WITH UK NUCLEAR COMPANY--London, 17 Jan (exclusive)--Israel has been making efforts to talk a British company specializing among other things in the production of nuclear reactors to operate in Israel. This HA'ARETZ reporter has learned that Communications Minister Mordekhay Tzipori discussed this with the management of the (GEC) company when he last visited Britain. He toured the company grounds and installations and discussed the possibility of purchasing communications equipment. Former Prime Minister Yitzhaq Rabin also dealt with this during his London junket last month, and even met with company President Lord (Weinstock), who is of Jewish ancestry. The company Lord (Weinstock) established, which is currently a public shareholders company, is considered one of the world's largest in the field of electronics. It specializes in developing nuclear knowhow and in the production of nuclear reactors. In the past it maintained contacts with the Tadiran subsidiary, Israel. Last year the British company sold electricity-operated power stations to Iraq, and it has vast commercial ties with the Arab world. [Report by correspondent in Britain Yosi Melman] [Text] [TA181054 Tel Aviv HA'ARETZ in Hebrew 18 Jan 82 p 2]

5100/4707



## URANIUM BOLSTERS STILFONTEIN, BUFFELSFONTEIN EARNINGS

Johannesburg RAND DAILY MAIL in English 21 Jan 82 p 11

[Article by John Mulcahy]

[Text]

**THE most depressed of all minerals, uranium, emerged as the unlikely star of General Mining Union Corporation's December quarter as it bolstered the earnings of Stilfontein and Buffelsfontein.**

Net income from Chemwes rose to R15 240 000 from R12 649 000, and the company declared a dividend totalling R6-million on December 2, of which R5 100 000 accrues to 85% parent Stilfontein.

The dividend from Chemwes — it takes the total distribution by the uranium operation to R9 400 000 for 1981 — helped to boost Stilfontein's taxed profit to R15 084 000 for the December quarter from R11 231 000.

A Gencor spokesman said yesterday that Chemwes's marketing situation — it sells 80% of its output to one customer — reduced the operation's future risk in the troubled uranium sector.

Chemwes's major customer may not be named because of the Atomic Energy Act ban, but the price arrangement is believed to be well above current spot market levels, and to be reasonably secure.

Oxide production at Chemwes fell to 162 394 kg from 168 815 kg, and net income for the year was R42 193 000. A total of R31 734 000 was appropriated for capital expenditure.

Buffelsfontein's uranium

working income rose to R8 155 000 from R4 860 000, and the mine received a R900 000 dividend from Chemwes.

The profit on Buffels own uranium operation was the highest since the December 1980 quarter, and reflects an improvement in volume sales on the spot market.

The mine has long-term uranium sales contracts until 1985, but these represent a small proportion of total production.

**WEST RAND CONS** moved entirely into gold production in the December quarter and mill throughput rose to 532 000 tons from 277 500 tons, yielding 771 kg of gold compared with 550 kg in the September quarter.

The west plant is solely on gold production, and the total ore milled includes 197 280 tons taken from the surface dumps and treated in the west plant.

Working revenue on gold increased to R10 188 000 from R8 234 000. Although costs were down at R13 133 000 from R15 967 000, there was a working loss on gold of R2 947 000 against R7 733 000 in the previous quarter.

Uranium was bought to meet commitments, and income from this source rose to R4 655 000 from R3 978 000. State aid almost halved to R2 576 000 from R4 620 000, leaving taxed profit of R2 541 000 against R51 000 in the September quarter.

Capital expenditure at

**STILFONTEIN** fell to R2 027 000 from R2 960 000, and distributable earnings rose to 100c a share from 63c, taking earnings for 1981 to 307c a share. If subsidiary Chemwes is consolidated, it takes the mine's earnings to 582c, but this is not distributable as the company has outstanding loans of about R50-million.

Chemwes will continue to have a positive impact on Stilfontein's results for the foreseeable future.

**BRACKEN'S** increased tonnage was more than offset by a further decline in average grade (see table), and gold production fell to 884 kg from 894 kg.

An increase in capital expenditure and lower taxed profit cut distributable earnings by half, and the mine is now uncomfortably in the break-up area at current gold prices.

**MARIEVALE** must also be rated in the break-up category, although distributable earnings in the December quarter rose to 16c a share from 11c the previous quarter.

The mine's longer-term depends on finding a new source of surface tonnage or substantial additions to underground reserves, but this is out of the question at a gold price below \$500 an ounce.

**ST HELENA** had a good quarter, with production steady and grade slightly lower. A sharp increase in sundry income to R4 825 000 from R1 350 000 helped to lift

taxed profit to R35 645 000 from R31 848 000.

Capital expenditure was higher at R5 268 000 compared with R2 624 000, but BEISA'S spending plummeted to R7 914 000 from R24 083 000, and distributable earnings rose to 223c from 136c.

The mine pays no mining tax as the value of assets taken over from Beisa exceeds the taxable income for the 15 months to December, but the company is still liable for State's share of profits. This amounted to R2 088 000 in the December quarter compared with R2 823 000.

Stoping operations at Beisa began in September and limited quantities of gold and uranium have been recovered.

Development is in progress on all levels from A down to 5 level, but operations are being hampered by water intersections.

In the December quarter 1 370 metres were advanced, while on the Beisa Reef, 89 metres were advanced on reef, and the 51 metres sampled showed average values of 4.1 g/t of gold and 1,259 kg/t of uranium.

UNISEL was liable for tax for the first time, and the mine had an excellent operational quarter, increasing tonnage to 300 000 from 270 000 and grade to 7.2 g/t from 6.9 g/t.

Pre-tax income rose by 24% to R18 114 000 from R14 617 000, but the tax charge of R6 133 000 reduced taxed profit to R11 981 000 from R14 617 000.

A further R2 471 000 in loans was repaid. Capital expenditure rose to R1 137 000 from R792 000.

WINKELHAAK had a steady quarter, with output and average grade unchanged, while the rise in receipts increased gold working revenue slightly to R45 766 000 from R45 117 000.

Capital expenditure at BEATRIX was R18 337 000, taking the total spent so far

to R73 156 000. The No 1 and No 2 shafts reached 384 metres and 486 metres respectively.

SUFFELSPONTEIN was aided by uranium income from its own operation and from Chemwes during the December quarter, and distributable earnings rose slightly to 161c a share from 158c.

Mill throughput fell by 24 000 tons, and this increased unit working costs by 4.8% to R55.62 a ton milled from R53.06.

A limited amount of development has been accomplished on the Black Reef at GROOTVLEI, with 51 metres being advanced on reef, of which 47 metres were sampled at a value of 10.1 g/t over a channel width of 146 centimetres.

A substantial reduction in tax and State's share of profits to R2 735 000 from R5 222 000 helped to boost taxed profit, and lower capital expenditure left distributable earnings 71% higher at 58c against 34c in the September quarter.

After a good recovery in the September quarter LESLIE'S average grade dropped to 3.1 g/t, its lowest in a year, and compared with 3.4 g/t in the previous quarter.

A slight fall in output compounded the value problem, and gold working revenue amounted to R12 450 000 compared with R13 473 000 in the September quarter.

Overall working costs rose by 4.4%, leaving taxed profit 42% down at R1 808 000 compared with R3 123 000. Distributable earnings were 47% lower at 8c a share against 15c.

KINROSS had a steady quarter with tonnage unchanged. Average grade dropped slightly to the levels of the March and June quarters last year.

Costs rose by 5% and this reduced taxed profit to R9 209 000 from R10 100 000. Distributable earnings fell to 38c a share from 43c.

FEDERAL REPUBLIC OF GERMANY

BRIEFS

GORLEBEN INTERIM STORAGE DEPOT--A judgment of the Lueneburg panel of the State administrative court which, by a temporary injunction had halted work on the planned interim storage depot for exhausted nuclear fuel elements at Gorleben, (to be distinguished from the explorations there regarding the appropriateness of the salt deposits for permanent storage) has been overruled by the senior administrative court at Lueneburg upon the objection of the German Society for Recycling of Nuclear Fuels (DWK). Construction of the planned interim storage depot can thus continue; with its own temporary injunction the senior administrative court's action is final. The lower administrative court, when it issued its order to discontinue the work, had only made reference to an investiture of the property that had been earlier approved, having recognized the delaying effect that an appeal upon its action would have in accordance with the old theory, which now has only limited validity, the same being recognized by the senior court--as seen in the reversed Lueneburg decision also--that with each partial approval the further stages of work also had to be taken into account and considered, up to the point of its clarification. [Text] [Frankfurt/Main FRANKFURTER ALLGEMEINE in German 2 Jan 82 p 4] 9878

EXCESS ATOMIC WASTE--Ever since an order to halt storage at the experimental radioactive waste storage depot at the salt mining plant "Asse II" was issued at the end of 1978, nothing short of a "mountain of nuclear waste" has accumulated in the Federal Republic. In order to deal with it, almost all state collection stations have had to expand their capacities so as to tide them over until the opening of a proper interim storage depot or the planned terminal storage depot for nuclear wastes at Gorleben. As disclosed in the written response of Secretary of State Hartkopf of the Federal Ministry of the Interior to a parliamentary question, published Monday in Bonn, a total of 57,300 drums of nuclear waste are stored at nuclear power plants, in the 8 state collection centers and at large-scale research centers and throughout the nuclear-technical industry. [Text] [Frankfurt/Main FRANKFURTER ALLGEMEINE in German 5 Jan 82 p 3] 9878

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